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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/602,467	06/23/2003	Venkat Selvamanickam	SPP 18.806	2664
34456	7590	01/06/2006	EXAMINER	
TOLER & LARSON & ABEL L.L.P.			TALBOT, BRIAN K	
5000 PLAZA ON THE LAKE STE 265			ART UNIT	
AUSTIN, TX 78746			PAPER NUMBER	

1762

DATE MAILED: 01/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/602,467	Applicant(s) SELVAMANICKAM ET AL.	
	Examiner Brian K. Talbot	Art Unit 1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/19/05.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. The amendment filed 10/19/05 has been considered and entered. Claims 10 and 11 have been added. Claims 1-11 remain in the application.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. In light of the amendment filed 10/19/05, the 35 USC 103 rejections have been withdrawn. However, the following 112 second paragraph and 103 rejections have been necessitated by the amendment.
4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim Rejections - 35 USC § 112

5. Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 11, the claim is confusing. The claim recites a “substrate block” which indicates a “finite length”, however, this is contrary to the independent claim which recites “a substrate is introduced on feed and take-up spools” which indicate the substrate is continuously fed. Clarification is requested.

Claim Rejections - 35 USC § 103

6. Claims 1 and 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iijima et al. (5,650,378) or Iijima et al. (6,214,772) in combination with Savvides et al. (2004/0168636), Sioshansi et al. (5,236,509), Koh et al. (6,319,326) or Maishev et al. (6,236,136).

Iijima et al. (5,650,378) teaches a method of making polycrystalline thin film and superconducting oxide body. Coating superconductive materials by sputtering while irradiating the substrate base with ion beams at an oblique angle to the base. The oblique angle being 40-60 degrees (abstract). Iijima et al. (5,650,378) depicts an apparatus in Fig. 7 which details a take-up and wind-up roll (1) where upon a superconductive coating is applied to the substrate on the take-up and wind-up rolls. Figs. 3 and 8 further depict an ion beam generator (13) utilized to modify the coating applied (col. 6, line 60 – col. 8, line 55 and col. 9, line 50 – col. 10, line 30).

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The substrate can be a variety of materials (col. 2, lines 55-60). The ions are supplied by high frequency in which RF is included.

Iijima et al. (6,214,772) teaches a process of preparing polycrystalline thin film and apparatus therefrom. The superconductive film is applied by depositing coating material while contacting the substrate with ion beam bombardment at an angle of 50-60 degrees (abstract). Apparatus depicted in Fig. 3, which shows a take-up roll (24) and a wind-up roll (25) to supply the substrate to the coating area for deposition. Argon is utilized to sputter the coating material from target (36) and onto the substrate (A). Ions are supplied from (39) at an angle of 50-60 degrees preferably 55 degrees. Cryo-pump (52) is utilized to maintain the proper pressure for deposition. The ions are supplied by high frequency in which RF is included.

Iijima et al. (5,650,378) or Iijima et al. (6,214,772) fail to teach a dual RF-ion.

Savvides (2004/0168636) teaches a process and apparatus for producing crystalline thin film buffer layers and structures having biaxial texture. Looking at Fig. 6, a tape (72) travels from a supply roll to a take-up roll while sputtering sources (70) are supplying the superconductive material onto the tape. Ion guns (71) are supplied to assist the deposition. The sources (70) can also be formed by laser ablation [0060]-[0063]. The arrangement is housed in a vacuum chamber (43) as depicted in Fig. 3 (see also [0017] – [0020] and [0031]-[0036]). J_c – critical current can be in the range of 5×10^5 A/cm² and higher (example 10) and thickness fo 100-500 nm.

Sioshansi et al. (5,236,509) a modular IBAD apparatus for continuous coating whereby separate modular IBAD stations are located next to one another in separated depsoition zones (abstract and Figs. 4,8,10 and 14)

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Koh et al. (6,319,326) teaches a IBAD process whereby ion sources (610,620) are located on either side of the substrate to form the coating (abstract and Figs. 5,6 and 8)

Maishev et al. (6,236,136) teaches multiple-beam ion beam assembly whereby separate areas of the substrate are contacted with ion beams which can be separated from one another or have oblique angles which overlap one another. (abstract and Figs. 1-5 and 8-10).

Therefore it would have been obvious for one skilled in the art at the time the invention was made to have modified Iijima et al. (5,650,378) or Iijima et al. (6,214,772) process by incorporating a dual RF-ion as evidenced by Savvides (2004/0168636), Sioshansi et al. (5,236,509), Koh et al. (6,319,326) or Maishev et al. (6,236,136) to obtain the desired advantages associated therewith, i.e. broader coverage thereby reducing throughput.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iijima et al. (5,650,378) or Iijima et al. (6,214,772) in combination with Savvides (2004/0168636), Sioshansi et al. (5,236,509), Koh et al. (6,319,326) and Maishev et al. (6,236,136) further in combination with Fritzemeier et al. (6,797,313).

Iijima et al. (5,650,378) or Iijima et al. (6,214,772) in combination with Savvides (2004/0168636), Sioshansi et al. (5,236,509), Koh et al. (6,319,326) and Maishev et al. (6,236,136) fail to teach the take-up and wind-up rolls being outside the coating chamber.

Fritzemeier et al. (6,797,313) depicts a superconducting coating applied to a tape substrate whereby take-up roll (130) and wind-up roll (140) are located outside the coating chamber.

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Therefore, it would have been obvious for one skilled in the art at the time the invention was made to have modified Iijima et al. (5,650,378) or Iijima et al. (6,214,772) in combination with Savvides (2004/0168636), Sioshansi et al. (5,236,509), Koh et al. (6,319,326) and Maishev et al. (6,236,136) process by locating the take-up and wind-up rolls outside the deposition chamber as evidenced by Fritzemeier et al. (6,797,313) with the expectation of achieving similar results.

Claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iijima et al. (5,650,378) or Iijima et al. (6,214,772) Iijima et al. (5,650,378) in combination with Savvides (2004/0168636), Sioshansi et al. (5,236,509), Koh et al. (6,319,326) and Maishev et al. (6,236,136) fail to teach a Kapton substrate and coating more than one substrate simultaneously.

While the Examiner acknowledges this fact, it is the Examiner's position that the type of substrate would be a matter of design choice and would be dependent upon the desired final product. In addition, the references teach a wide variety of substrates and hence, one skilled in the art would have had a reasonable expectation of achieving similar success regardless of the type of substrate utilized. With respect to coating more than one substrate simultaneously, it has been well settled that the mere duplication of parts has been held to be obvious *In Re Harza 124 USPQ 378*.

Response to Amendment

7. Applicant's arguments with respect to claims 1-11 have been considered but are moot in view of the new ground(s) of rejection.

Applicant argued that the prior art fails to teach a dual ion source whereby the ion sources are aimed at different portions of the substrate (claims 1-9) as well as a separator there between (claim 10).

First off, with respect to the Savvides (2004/0168636) reference, the claimed subject matter "ion sources aimed at different portions of the deposition zones" is not limited to having the ion sources overlap which is the case of Savvides (2004/0168636). Furthermore, it is known in the art that the ion beams have a "spread or width" of the beams and hence this would produce "different zones" on the substrate as Savvides (2004/0168636) process does not disclose that the ion beams are focused on the same area.

With respect to the Sioshansi et al. (5,236,509), Koh et al. (6,319,326) and Maishev et al. (6,236,136), they all teach multiple ion sources contacting the substrate at different portions of the deposition zones as noted above. Applicant's acclaims are broad enough to read upon the ion sources being associated with separate coating material sources as well as being located on either side of the substrate.

Absent a showing of unexpected results regarding the Overlapping or lack thereof, of the assisted ion beam, it is the Examiner's position that one skilled in the art at the time the invention was made would have had a reasonable, expectation of achieving similar success regardless of

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the arrangement of the ion beams, i.e. overlapping or not. Upon such a showing of unexpected results, the Examiner will reconsider his position regarding the Savvides (2004/0168636)

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian K. Talbot whose telephone number is (571) 272-1428. The examiner can normally be reached on Monday-Friday 6AM-3PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy H. Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 12/16/05

Brian K Talbot
Primary Examiner
Art Unit 1762

BKT